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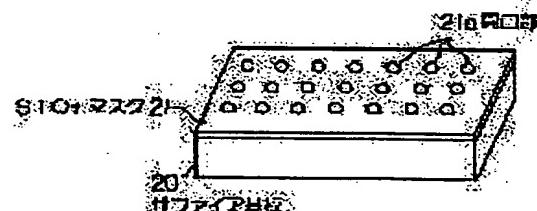
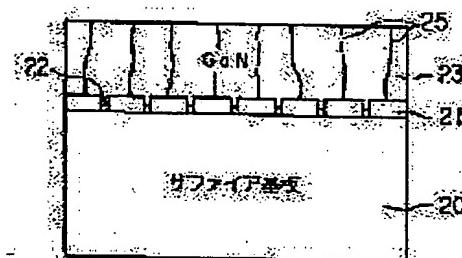
JP

## (54) NITRIDE SEMICONDUCTOR ELEMENT, LIGHT EMITTING ELEMENT AND THEIR MANUFACTURE

### (57) Abstract:

**PROBLEM TO BE SOLVED:** To reduce the crystal defect density of dislocations, laminate defects, defective tubular holes, etc., by forming a desired element structure on a nitride compd. semiconductor layer involving a first region having vertically extending through-dislocations and second region released from the dislocation, other than the center part.

**SOLUTION:** On a sapphire substrate 20, an SiO<sub>2</sub> mask 21 having openings 21a of 2 μm in diameter at spacings of 10 μm is formed, the sapphire substrate 20 with the mask 21 is introduced in a region chamber of an MCVD apparatus, then thermally cleaning is made to remove moisture and natural oxide film, a GaN buffer layer 22 is formed on the sapphire substrate 20 with the mask 21, and the substrate temp. is raised after growing the buffer layer 22 to form a GaN layer 23. From the sectional TEM observation, the through-dislocations 25 locate only approximately at a central part of the SiO<sub>2</sub> mask 21 and the crystal defect little exists at other parts.



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